**Amendments to the Specifciation**

**[0001]** This application is related to application [Ser. No. 10/_____] Ser. No. 10/611,366 (Attorney Docket No. GP-303271) entitled "INJECTION STRATEGY FOR OPERATING A DIRECT-INJECTION CONTROLLED AUTO-IGNITION FOUR-STROKE INTERNAL COMBUSTION ENGINE" filed on even date herewith and incorporated herein by reference.

**[0018]** Figure 4 illustrates an exemplary combustion stability versus intake valve opening phase curve demonstrative of low load limit benefits in accordance with the method of the present [invention.] invention; and,

**[0032]** The impact of current invention on the low load limit of the exemplary controlled auto-ignition engine operation is shown in Figure 4. Without using the current invention, the low load limit of the exemplary -- and most typical -- four-stroke direct-injection auto-ignition gasoline engine is around 225 kPa Net Mean Effective Pressure (NMEP) with 5 % Coefficient of Variation of Indicated Mean Effective Pressure (COV of IMEP) as an indicator. The data plotted in Figure 4 was acquired with leaned out fueling to substantially 175 kPa NMEP and with implementation of the exemplary intake and exhaust valve profiles heretofore described. The plot of line 71 clearly shows combustion stability improvement with the introduction and expansion of low-pressure events within the combustion chamber as described herein. The clear conclusion drawn is that expanding the sub-atmospheric pressure conditions improves combustion stability and allows the

engine to be operated at lower load limits. Figure 5 is demonstrative of the same clear benefits and advantages of implementing the present invention on a normalized scale of NMEP within the combustion chamber relative to ambient. In that Figure, point 83 represents the low load limit of substantially 225 kPa in terms of NMEP with 5 % COV of IMEP as the indicator. Points to the left in the Figure (i.e. lower NMEPs) correspond to lower loads. The plot of line 81 clearly shows significantly less NMEPs before the acceptable 5% or less COV of IMEP is reached, effectively moving the low load limit point to about 150 kPa [NMEP] NMEP. ~~The present invention has been described with respect to certain preferred embodiments and variations herein. Other alternative embodiments, variations ad implementations may be implemented and practiced without departing from the scope of the invention which is to be limited only by the claims as follow:~~

**[0033]** The present invention has been described with respect to certain preferred embodiments and variations herein. Other alternative embodiments, variations ad implementations may be implemented and practiced without departing from the scope of the invention which is to be limited only by the claims as follow: